

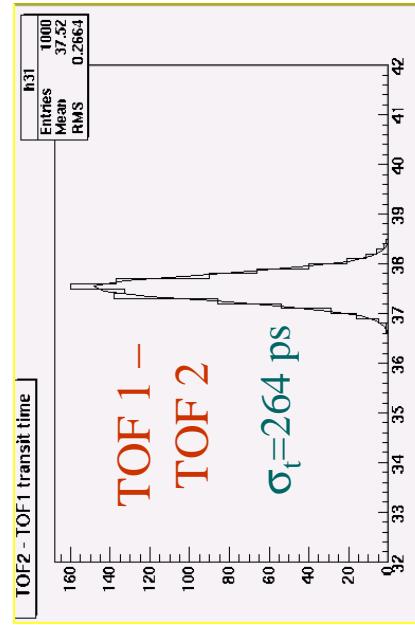
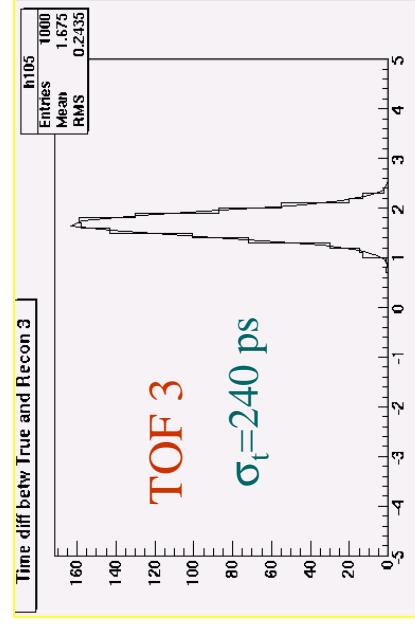
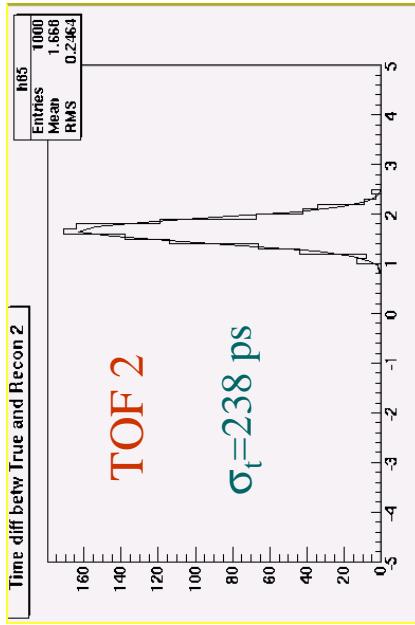
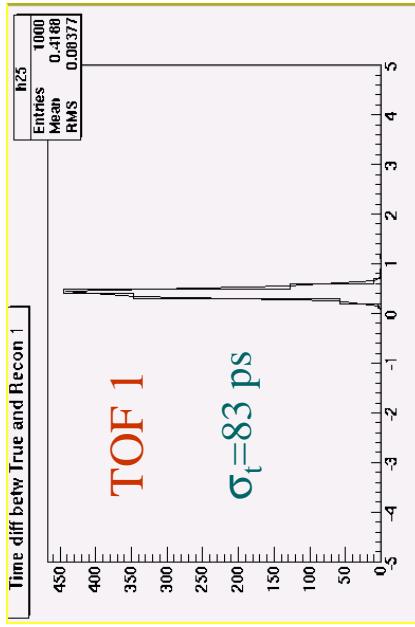
TOF Reconstruction

- What does it do?
 - It reads in the *Sim.out* file of hits.
 - This is converted to a digitization using the Tof Response.
 - This could be done in GEANT and *Dig.out* file could be used.
 - It adds together multiple hits if more than one hit occurs in the same TOF slab.
 - A Space Point is created from the digitization:
 - The X-coordinate (in the direction of the segmentation) is determined from the slab number.
 - The Y-coordinate (in the direction of the slab) is determined from the difference in arrival times at the phototubes at each end.
 - The Z-coordinate is known from the plane location.

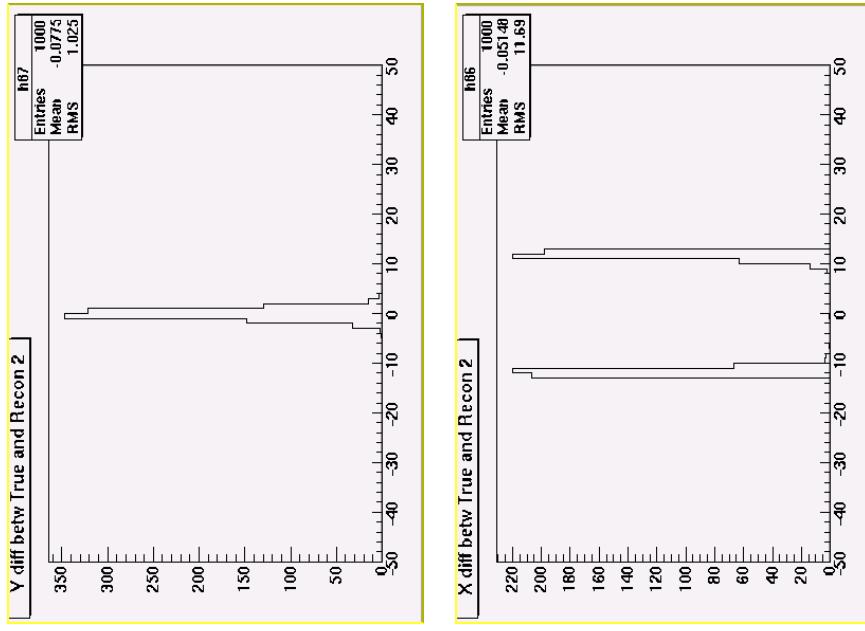
TOF Reconstruction (Continued)

- If the track crosses from one slab to another, the X-component is calculated by weighting the positions of each slab with the deposited energy (ie., the number of adc counts).
- The resolution that the reconstruction should see comes from the randomization that occurs during the detector response process.

Time Resolution Plots



Spacial Resolution



- Shown on the right is the difference between the *reconstructed* position and the true position.
 - The top figure shows the Y coordinate. The reconstruction uses the difference in time that the signal arrives at the PMT.
 - The lower figure shows the X coordinate. The reconstruction uses the slab number. It gives discrete values separated by 25 mm.
- The figures show TOF 2.